

WHAT IS CLAIMED IS:

- Sub.a2*
1. A method for inducing an immunological response in a mammalian host susceptible to Lyme disease or *Borrelia burgdorferi* infection comprising mucosally administering isolated *Borrelia burgdorferi* OspA in admixture with a carrier or diluent.
 2. The method of claim 1 wherein the OspA is purified recombinant, lipidated OspA substantially free of other bacterial proteins, and substantially free of LPS.
 3. The method of claim 2 wherein the mucosally administering is by orally administering.
 4. The method of claim 3 wherein the carrier or diluent is a liquid.
 5. The method of claim 3 wherein the carrier or diluent is bait food.
 6. The method of claim 3 wherein the OspA in admixture with a carrier or diluent is free of any immunogenicity-enhancing adjuvant.
 7. A method for inducing an immunological response in a mammalian host susceptible to Lyme disease or *Borrelia burgdorferi* infection comprising mucosally administering a composition consisting essentially of isolated *Borrelia burgdorferi* OspA and a carrier or diluent.
- Sub.a3*

Sub. a3
8. The method of claim 7 wherein the OspA is purified recombinant, lipidated OspA substantially free of other bacterial proteins, and substantially free of LPS.

9. The method of claim 8 wherein the mucosally administering is by orally administering.

10. The method of claim 8 wherein the OspA is obtained by:

transforming a host organism by a plasmid containing a gene coding for a full-length wild-type *Borrelia burgdorferi* OspA lipoprotein and producing recombinant *Borrelia burgdorferi* OspA lipoprotein, and

purifying the recombinant *Borrelia burgdorferi* OspA lipoprotein substantially free from other bacterial proteins, and from lipopolysaccharide, under non-denaturing conditions from a lysate of the host organism so as to obtain a purified recombinant *Borrelia burgdorferi* lipoprotein which remains lipidated and is in a form administrable to the host.

11. An immunological composition consisting essentially of isolated *Borrelia burgdorferi* OspA and a suitable carrier or diluent whereby the composition is suitable for oral administration.

Sub. a4
12. The composition of claim 11 which is a solution, suspension, emulsion, syrup, elixir, capsule, tablet, hard-candy-like preparation, or a solid food item.

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